

Listing of The Claims:

The following Listing of the Claims will replace all prior versions and all prior listings of the claims in the present application:

Cancel claim 6 and claim 13

1. (Currently Amended) A method of detecting a precancerous lesion resulting from a mucosal papilloma virus infection in an organism, the method comprising the steps of: ~~obtaining~~ contacting in vitro a sample of the organism's cells from the site of potential infection; ~~contacting the cells~~ with a molecule that binds specifically to mucosal papilloma virus- E4 protein; and monitoring said binding.
2. (Currently Amended) A The method according to claim 1, wherein the organism is a mammal.
3. (Currently Amended) A The method according to claim 2, wherein the organism is a human and the papilloma virus is human papilloma virus (HPV).
4. (Currently Amended) A The method according to claim 2 ~~or claim 3~~, wherein the site of potential infection is the cervix.
5. (Currently Amended) A The method according to claim 3, wherein the human papilloma virus is selected from the group consisting of HPV types 16, 18, 33, 35, 45, 51, 52, 56, 58 and 61.
7. (Currently Amended) A The method according to claim 1, further comprising determining the type(s) of HPV infection in the organism ~~a patient, the method~~ said determination comprising the steps of: ~~obtaining a sample of the patient's cells from the site of HPV infection~~; contacting the cells with a molecule that binds specifically to a subset of HPV E4 proteins; and monitoring said binding.

8. (Currently Amended) A The method according to ~~any preceding~~ claim 1, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
9. (Currently Amended) A The method according to claim 8, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.
10. (Currently Amended) A The method according to claim 9, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.
11. (Currently Amended) A The method according to claim 10, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.
12. (Currently Amended) The A method according to ~~any preceeding~~ claim 1, wherein the molecule capable of binding to a papilloma virus E4 protein is an antibody or an antigen binding fragment thereof.
14. (New) The method according to claim 3, wherein the site of potential infection is the cervix.
15. (New) The method according to claim 2, further comprising determining the type(s) of HPV infection in the organism, said determination comprising the steps of: contacting the cells with a molecule that binds specifically to a subset of HPV E4 proteins; and monitoring said binding.
16. (New) The method according to claim 3, further comprising determining the type(s) of HPV infection in the organism, said determination comprising the steps of: contacting the cells

with a molecule that binds specifically to a subset of HPV E4 proteins; and monitoring said binding.

17. (New) The method according to claim 4, further comprising determining the type(s) of HPV infection in the organism, said determination comprising the steps of: contacting the cells with a molecule that binds specifically to a subset of HPV E4 proteins; and monitoring said binding.

18. (New) The method according to claim 5, further comprising determining the type(s) of HPV infection in the organism, said determination comprising the steps of: contacting the cells with a molecule that binds specifically to a subset of HPV E4 proteins; and monitoring said binding.

19. (New) The method according to claim 14, further comprising determining the type(s) of HPV infection in the organism, said determination comprising the steps of: contacting the cells with a molecule that binds specifically to a subset of HPV E4 proteins; and monitoring said binding.

20. (New) The method according to claim 2, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.

21. (New) The method according to claim 3, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.

22. (New) The method according to claim 4, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.

23. (New) The method according to claim 5, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.

24. (New) The method according to claim 7, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
25. (New) The method according to claim 14, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
26. (New) The method according to claim 15, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
27. (New) The method according to claim 16, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
28. (New) The method according to claim 17, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
29. (New) The method according to claim 18, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
30. (New) The method according to claim 19, wherein the molecule capable of binding to the papilloma virus E4 protein is capable of binding within a hydrophilic region of the E4 sequence.
31. (New) The method according to claim 20, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.
32. (New) The method according to claim 31, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

33. (New) The method according to claim 32, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

34. (New) The method according to claim 21, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

35. (New) The method according to claim 34, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

36. (New) The method according to claim 35, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

37. (New) The method according to claim 22, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

38. (New) The method according to claim 37, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

39. (New) The method according to claim 38, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

40. (New) The method according to claim 23, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in

HPV16. or its homologue in other papilloma viruses.

41. (New) The method according to claim 40, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

42. (New) The method according to claim 41, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

43. (New) The method according to claim 24, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

44. (New) The method according to claim 43, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

45. (New) The method according to claim 44, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

46. (New) The method according to claim 25, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

47. (New) The method according to claim 46, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

48. (New) The method according to claim 47, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

49. (New) The method according to claim 26, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

50. (New) The method according to claim 49, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

51. (New) The method according to claim 50, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

52. (New) The method according to claim 27, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

53. (New) The method according to claim 52, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

54. (New) The method according to claim 53, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

55. (New) The method according to claim 28, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRLSSDQDSQTP (SEQ ID NO:4) in

HPV16. or its homologue in other papilloma viruses.

56. (New) The method according to claim 55, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

57. (New) The method according to claim 56, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

58. (New) The method according to claim 29, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRRLLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

59. (New) The method according to claim 58, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.

60. (New) The method according to claim 59, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

61. (New) The method according to claim 30, wherein the hydrophilic region is the region which possesses the sequence RPIPKPSPWAPKKHRRLLSSDQDSQTP (SEQ ID NO:4) in HPV16. or its homologue in other papilloma viruses.

62. (New) The method according to claim 61, wherein the hydrophilic region is the region which possesses the sequence RRIPKPSPWAPKKHR in HPV16 (SEQ ID NO:167), or its homologue in other papilloma viruses.



63. (New) The method according to claim 62, wherein the hydrophilic region is the region which possesses the sequence PKPSPWAPKKH(R) (SEQ NO:168) in HPV16, or its homologue in other papilloma viruses.

64. (New) The method according to any one of claims 2-5, 7-11 and 14-63, wherein the molecule capable of binding to a papilloma virus E4 protein is an antibody or an antigen binding fragment thereof.